A New *Leptochloa* (Poaceae: Chloridoideae) from Papua New Guinea and the Torres Strait Islands of Australia

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ABSTRACT. *Leptochloa simoniana* N. Snow is newly described from Papua New Guinea and Boigu Island in the Torres Strait, Queensland, Australia. A key and tabular diagnosis are provided for *L. simoniana* and morphologically similar congeneric species. It most resembles the sub-Saharan species *L. coerulescens*. Its chief diagnostic features are the long-sericeous to arachnose hairs at the apex of the callus and the densely scabrous adaxial and abaxial leaf surfaces. The species is currently known from only three sites and is thus considered vulnerable.

RESUMEN. Se describe *Leptochloa simoniana* N. Snow, una especie nueva de Papúa Nueva Guinea y de la Isla Boigu en el Estrecho de Torres, Queensland, Australia. Se proporcionan una clave y una diagnosis tabular para *L. simoniana* y especies congenéricas morfológicamente similares. Es muy parecida a *L. coerulescens*, una especie del sub-Sahara. Se distingue principalmente por los tricomas largos a aracnoideos en la base de la lema. En actualidad la especie se conoce sólo de tres lugares y por lo tanto se la considera vulnerable.

The eragrostoid genus *Leptochloa* P. Beauvois occurs worldwide from temperate to tropical regions and consists of some 40 taxa (Snow, 1997a, 1998a). All widespread annual species are considered weedy in agricultural situations (Häfliger & Scholz, 1981; Snow, 1997a), and some are anthropogenically transcending oceanic boundaries and becoming established on continents far beyond their normal range (Lazarides, 1980; Snow & Simon, 1999). This article describes a new species brought to my attention by the collector of the type material, Barbara Waterhouse, and brings to three the number of newly described species in the genus since 1997 (Snow & Simon, 1997; Snow, 1998b).

Morphological attributes of herbarium material were measured and compared to known species of *Leptochloa* following Snow (1997a) under a phylogenetic species concept (Snow, 1997b). Descriptive terminology follows recommendations of the Systematics Association Committee (1962).

Leptochloa simoniana N. Snow, sp. nov. TYPE: Australia. Queensland: Cook District, Boigu Island, Torres Strait, 9°13.89′S, 142°13.26′E, 31 Mar. 1998, *B. M. Waterhouse & J. F. Grimshaw BMW 4862* (holotype, BRI; isotypes, BO, BRI, CANB, GREE, K, L, LAE, MEL, MO, NAQS, NSW, QRS). Figure 1.

Similis *Leptochloae caerulenti* autem paniculae ramis pluribus, pilis arachnoideis lemmatis basi, lemmatibus glumisque longioribus, vaginis dense scabris interdum pilos tuberculatos pilosos gerentibus, differt.

Plants annual, caespitose. Culms erect, sometimes branching, arising from fibrous roots, 90–140 cm tall, 2.5–4.0 mm wide at base, round to laterally compressed; nodes glabrous but often glaucous; internodes glabrous, 6–20 cm long, hollow. Leaf sheaths somewhat flattened near ground, longer or shorter than internodes, prickles short but dense throughout, tuberculate pilose hairs sometimes present, margins glabrous; collars green, lacking anthocyanin pigmentation. Ligules membranous, 3–4 mm long, apex truncate and erose. Leaf blades ± linear, 20–35 × 0.35–0.9 cm at base, densely scabrous throughout above and below, occasionally bearing a few tuberculate pilose hairs, flat but drying involute, remaining attached at base, midrib prominent above near base, less so elsewhere. Panicles narrow, inserted basally, exserted ca. 2/3 length or more, 45–75 × 2–10 cm; branches 65—75, alternate or sub-whorled, ascending to steeply ascending, 5–10 cm long near base decreasing to 5 mm or less near apex, rigid to slightly flexuous, densely scabrous throughout and highly striate, axils glabrous. Spikelets 3(4)-flowered, laterally compressed, 3.0–3.4 mm long, imbricate ca. 1/5–1/2 their length, pedicels 0.5–1.0(–2.0) mm long. Glumes membranous, 1-nerved, narrowly triangular to narrowly ovate; lower glume 1.6–2.1 mm long, apex attenuate, scabrous with prickles on midnerve and sometimes laterally; upper glume 1.8–2.4 mm long, apex acute to attenuate and sometimes shortly mucronate, scabrous with prickles on midnerve and laterally. Lemmas 3-nerved, membranous, (lowermost) 2.3–2.7 mm long, ovate, green, sometimes tinged maroon or crimson, lateral nerves neither prominent nor distinctly raised abaxially, hairs sericeous to arachnose at very base and callus apex (up to 1.3 mm long) but becoming relatively short sericeous (< 0.5 mm long) apically along nerves (sometimes sparsely so), sometimes shortly sericeous between nerves in lower third, hair tips tapered (Snow, 1996); apex acute or slightly emarginate and sometimes shortly mucronate. Palea thinly membranous, subequal to ca. 2/3 lemmatal length, narrowly elliptic to narrowly ovate, sericeous to arachnose along nerves; apex obtuse or

Table 1. Summary of character differences between *Leptochloa simoniana* and morphologically similar species in the genus. Character data from related species from Snow (1997a).

	L. simoniana	*L. coerulescens*	*L. chinensis*	*L. scabra*
Callus apex	long-sericeous to arachnose	glabrous	glabrous	glabrous
Leaf sheaths	scabrous with tuberculate pilose hairs	glabrous	glabrous or with a few pilose hairs near apex	glabrous to scabrous; margins glabrous
Leaf blades	densely scabrous above/below; occasionally with tuberculate pilose hairs	minutely but very densely scabrous above and below	glabrous to minutely scabrous	scabrous above and below
Ligule (mm)	3–4	1.2–2	1.8–5.4	(0.5–)1.5–2
Panicle branch number	65–75	(8–)27–47	25–60	50–150
Panicle branch stiffness	rigid to slightly flexuous	flexuous to arcuate	rigid to slightly flexuous	flexuous to arcuate
Florets	3(–4)	(2–)3–5	4–6	4–6
Lower glume (mm)	1.6–2.1	0.8–1.1	1.1–1.5(–1.7)	0.8–1.6
Upper glume (mm)	1.8–2.4	1.5–2.0	1.2–1.7	1.1–2.1
Lower lemma (mm)	2.3–2.7	1.6–2.2	1.2–1.7	2.1–2.4

with nerves slightly protruding. Lodicules 2, 0.3–0.4 mm, widely obovate, apex truncate. Stamens 3; anthers ca. 0.5–0.6 mm long, yellow. Caryopsis 1.2–1.3 × 0.6 mm, narrowly elliptic to narrowly ovate in hilar profile (Snow, 1998c), depressed ovate to oblate in trans-sectional profile, hilar groove absent, surface smooth, light brown; pericarp tightly adnate to endosperm.

Vernacular name. Simon sprangletop.

Leptochloa simoniana is currently known only from two collections near the southern coast of Papua New Guinea and two collections (including the type) from Boigu Island, Torres Strait, Australia. Two collections originated along footpaths and their connecting villages, whereas the two collections from Boigu Island were both taken from a refuse dump at the end of an airstrip. The species grows in seasonally inundated or disturbed sites such as footpaths, which is typical of other annual taxa in the genus (Snow, 1997a). Its preference for disturbed sites, along with the weedy tendencies of many annual taxa of *Leptochloa* (Snow, 1997a), suggests the species could also spread as a weed. *Leptochloa simoniana* also has been observed growing in brackish sites and adjacent mangrove vegetation (Waterhouse, pers. comm. 1998). Given the paucity of collections, the appropriate designation for *L. simoniana* is vulnerable (Criterion D; Species Survival Commission, 1994: 20).

The gross morphology of *Leptochloa simoniana* most resembles that of *L. coerulescens* Steudel, which is native to much of sub-Saharan Africa (Clayton, 1972; Philips, 1974; Koekemoer, 1991; Snow, 1997a). Features shared by both species include a narrow panicle, ascending habit of the panicle branches, dense prickles on the adaxial and abaxial leaf surfaces, and dense prickles on the sides of the upper glume. Two characters in particular help diagnose *Leptochloa simoniana* from related species. The first is the long-sericeous to arachnose hairs occurring on the upper portion of the callus. The second diagnostic feature is the dense distribution of prickles throughout both sheaths and blades of the leaves, upper glume, and occasionally lower glume (e.g., *Waterhouse 4121*). Diagnostic features of *Leptochloa simoniana*, *L. coerulescens*, *L. chinensis* (L.) Nees, and *L. scabra* Nees are summarized in Table 1, since the latter three generally resemble *L. simoniana.*

Although transoceanic arrivals into Australasia have been documented for several species of *Leptochloa* (e.g., Hitchcock, 1936; Lazarides, 1980; Nowack, 1994; Snow, 1997a; Snow & Simon, 1999), *L. coerulescens* has not been reported outside of Africa (Snow, 1997a). Specimens of the neotropical species *L. scabra* have been known from New Guinea for some time (Hitchcock, 1936) and these recently were confirmed (Nowack, 1994; Snow, 1997a), but this is far outside its normal range. I have seen (Snow, 1997a) the New Guinea specimens of Brass that Nowack (1994) suggested might be *L. scabra.* These specimens are as follows: *L. scabra* (*3725* pro parte; *6304a*); *L. virgata* (*3725* pro parte). Two other collections of Brass from New Guinea belonging to *L. scabra* are *1597* and *6043* (Snow, 1997a: 447).

The collectors note on the label of the type specimen insect predation on many florets, and speculate the larvae as being those of chrysomelid beetles (not verified). Mealy bugs also have

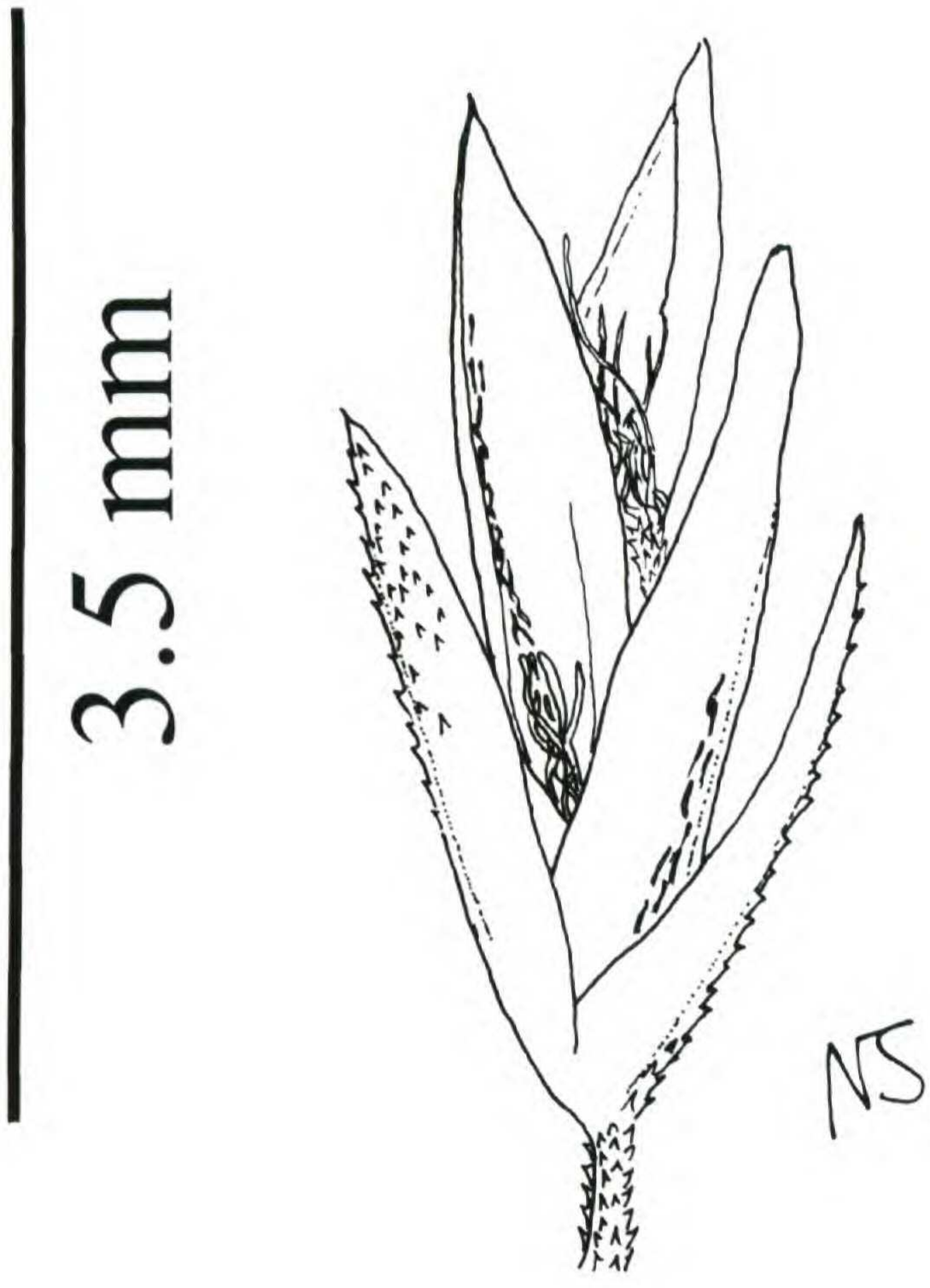

Figure 1. *Leptochloa simoniana* N. Snow (*Waterhouse 4108*). —A. Spikelet; arachnose hairs of callus evident in florets two and three. —B. Uppermost floret from different spikelet; lemma at left, palea at right, prickle-bearing rachilla, and arachnose hairs at apex of callus.

been observed on the base of culms, root crowns, and the abaxial surface of the ligules. The author would greatly appreciate viable seed of this species for further systematic studies of *Leptochloa*.

It is a pleasure to name this species after Bryan Simon, Senior Principal Botanist at the Queensland Herbarium, whose steady research output over three decades has greatly advanced our knowledge of the grass floras of Africa and Australia (e.g., Simon, 1971, 1972, 1992, 1993; Simon & Jacobs, 1999).

KEY TO *LEPTOCHLOA SIMONIANA* AND SIMILAR SPECIES

1. Callus bearing long-sericeous to arachnose hairs; Papua New Guinea and Torres Strait Islands of Australia . . . . . *L. simoniana*
1′. Callus glabrous; Asia, Africa, or New World, very rarely Australian 2
2. Panicle branches mostly rigid, not flexuous; rachilla often visible between uppermost florets; upper florets barely if at all imbricate; southern Asia and Africa, one collection from Mt. Isa, Queensland, Australia . . . . . *L. chinensis*
2′. Panicle branches ± flexuous; rachilla generally invisible between uppermost florets; upper florets somewhat imbricate 3
3. Leaf sheaths scabrous, glabrous on margins; second glume ± glabrous; lemma 2.1–2.4 mm long; panicle branches 50–150; southern North America to South America, introduced but apparently rare in New Guinea . . . . . *L. scabra*
3′. Leaf sheaths glabrous throughout; second glume with prickles on nerves and sides; lemma 1.6–2.2 mm long; panicle branches 27–47; sub-Saharan Africa . . . . . *L. coerulescens*

Paratypes. PAPUA NEW GUINEA. **Western Province**: Old Mawatta, 9°08.4′S, 142°56.9′E, 13 Feb. 1997, *B. M. Waterhouse BMW 4121* (BO, BRI, NAQS); Ture Ture, 9°06.5′S, 143°00.0′E, 13 Feb. 1997, *B. M. Waterhouse BMW 4108* (BRI). AUSTRALIA. **Boigu Island:** Torres Strait, rubbish dump, 9°14.6′S, 142°12.5′E, 20 Aug. 1999, *Waterhouse 5389* (BRI, CANB, MBA).

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